



Department of Commerce

## Safety & Buildings Division

201 West Washington Avenue

P.O. Box 2658

Madison, WI 53701-2658

Evaluation # 200323-H

# Wisconsin Building Products Evaluation

Material

Waste Oil-Fired Unit Heater  
And Furnace

Manufacturers

Reznor, A Unit of Thomas & Betts  
150 McKinley Avenue  
Mercer, PA 16137

Reznor, Thomas & Betts Monterrey  
Profr. Rodolfo Gonzalez #100  
Monterrey, Mexico 67119

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### SCOPE OF EVALUATION

**GENERAL:** This report evaluates Venturion™ Models RV 225 and RV 325 combustion-type waste oil burning unit heaters or furnaces. The Venturion™ Models RV 225 and RV 325 combustion-type waste oil burning equipment is manufactured by Reznor, A Unit of Thomas & Betts.

This review includes the cited **International Building Code (IBC)** requirements below in accordance with the current **Wisconsin Amended IBC Code:**

The Venturion™ Models RV 225 and RV 325 were evaluated for use as waste oil burning appliances in accordance with the separation requirements of **s. IBC 302.1.1.1**.

This review includes the cited **International Mechanical Code (IMC)** requirements below in accordance with the current **Wisconsin Amended IMC Code:**

The Venturion™ Models RV 225 and RV 325 were evaluated for use as waste oil burning appliances in accordance with **ss. Comm 64.0001, 64.0002, 64.0102, 301.3, 301.4(a), 301.5, 303.1, 304.1, 910.1, 917.1, 918.1, and 920.1**.

The Venturion™ Models RV 225 and RV 325 were evaluated for use as waste oil burning appliances in accordance with the current **Wisconsin Flammable and Combustible Liquids Code, Chapter Comm 10**.

Reznor Model OT-250 oil supply storage tank was evaluated in accordance with the current **Wisconsin Flammable and Combustible Liquids Code, Chapter Comm 10**.

Class II fuel oil tanks (No. 2 fuel oil or other combustible fuels) and used crankcase oil tanks shall comply with **Chapter Comm 10** in accordance with the **(IMC) as Modified by Chapter Comm 64**.

### **DESCRIPTION AND USE**

The Venturion™ Models RV 225 and RV 325 (200,000 and 280,000 Btuh input respectively) unit heater or furnace, used to burn waste oil and No. 2 fuel oils. The used oil must be no heavier than 50 weight and not lighter than No. 2 fuel oil.

The unit heater or furnace is shipped with the warm air discharge on the front. To adapt the unit heater or furnace to a building, the discharge opening may be moved to the rear or divided between front and rear.

The atomizing burner provides flame retention. Air for atomization of the oil is, provided by an onboard piston-type compressor. An oil preheating system (U.S. Patent No. 5,080,579) heats the oil, maintaining it at a temperature required for atomization but preventing nozzle after-drip. The burner has electric spark ignition and an electronic cad-cell flame safety system with manual reset. The blower control prevents cold air discharge at start-up and provides continued warm air while the unit is hot after burner shutdown. The safety control protects the heater from high temperatures caused by an airflow restriction or motor failure.

Model RV225 is equipped with a direct drive blower and motor capable of handling up to .25" w.c. of external static pressure. Model RV325 is equipped with an adjustable belt drive motor and blower and will handle up to .5" w.c. of external static pressure. All Model RV units may be connected to ductwork. Both units have a blower inlet guard; Model RV325 has a belt guard.

The remote fuel pump mounted on or near the oil supply tank is part of a positive pressure supply system providing a precisely metered flow of oil to the heater. This positive displacement pump produces a stable flame under a wide range of operating parameters and allows up to 60 feet of supply line with a 15 feet lift. A fuel line filter with a disposable strainer, a vacuum gauge, and a foot valve are provided for installation in the line that runs from the supply tank to the fuel pump.

The Venturion™ Models RV 225 and RV 325 waste-oil-fired unit heater or furnace is engineered to facilitate maintenance procedures required when burning used oil. Model RV units feature a heavy gauge, single passage combustion chamber/heat exchanger with full diameter access at both ends.

### **TESTS AND RESULTS**

The Venturion™ Models RV 225 and RV 325 waste-oil-fired unit heater or furnace is listed by Underwriter's Laboratories, Inc., for conformance to UL Standards 296A Waste Oil-Burning Air-Heating Appliance and CSA International CSA B140.4 Oil-Fired Warm Air Furnace.

The tank is constructed in accordance with the current edition of the Standard of Underwriter's Laboratories, Inc., for Steel Aboveground Tanks for Flammable and Combustible Liquids for indoor use with flammable liquids.

### **LIMITATIONS OF APPROVAL**

Because garages and aircraft hanger buildings are classified as a high hazard use under **IBC Chapter 3**, waste oil tanks are not required to be placed in rated enclosures within those occupancies.

In accordance with their listings, the Venturion™ Models RV 225 and RV 325 waste-oil-fired unit heater or furnace models including the waste oil tank can be installed as individual units with other code complying tanks or heating equipment, as long as the applicable portions of this approval are observed.

The Venturion™ Models RV 225 and RV 325 waste-oil-fired unit heater or furnace is approved as a heating appliance that meet standards recognized by the department and are listed by an agency recognized by the department in accordance with **(IMC) as Modified by Chapter Comm 64.**

The Venturion™ Models RV 225 and RV 325 waste-oil-fired unit heater or furnace installed in a storage garage, Repair garage and factory occupancies shall be installed as required per **s. IBC 303, Table 302.1.1, and s. IBC 1007.1.** The Venturion™ Models RV 225 and RV 325 waste-oil-fired unit heater or furnace installed in garages shall be suspended at least 8 feet off the main floor and be visible from the main floor in accordance with **s. IBC 406.6.5, Exception 1.**

The Venturion™ Models RV 225 and RV 325 waste-oil-fired unit heater or furnace shall be installed in aircraft hangers as allowed in **s. IBC 412.2.4.**

In occupancies where waste oil equipment is allowed, the equipment protection from damage shall be in accordance with **s. IMC 303.4.**

Class II fuel oil tanks (No. 2 fuel oil or other combustible fuels) and used crankcase oil tanks shall comply with **Chapter Comm 10** in accordance with the **(IMC) as Modified by Chapter Comm 64.**

The tank shall be installed indoors in accordance with **s. Comm 10.335(2)**, no more than 36 inches above the floor. The tank shall be provided with a 2-inch I.D. normal vent and with a 4-inch I.D. emergency vent. Both vents shall terminate outside the building in accordance with NFPA 30.

The fill opening for the tank may terminate outside the building in accordance with section 2-4 of NFPA 30 or inside the building in accordance with section 5-4 of NFPA 30. If the fill terminates inside the building, it must be closed with a vapor tight cap or be part of a closed system. The fill pipe shall be closed after the filling activity is completed.

As is required for all types of heating equipment and fuel tanks, plans shall be submitted to the department for review in accordance with **s. Comm 61.30.**

The Venturion™ Models RV 225 and RV 325 waste-oil-fired unit heater or furnace shall be installed, vented, and used in accordance with their listing, the manufacture's recommendations and this evaluation.

This approval will be valid through December 31, 2008, unless manufacturing modifications are made to the product or a re-examination is deemed necessary by the department. The product approval is applicable to projects approved under the current edition of the applicable codes. This approval may be void for project approvals made under future applicable editions. The Wisconsin Building Product Evaluation number must be provided when plans that include this product are submitted for review.

#### **DISCLAIMER**

The department is in no way endorsing or advertising this product. This approval addresses only the specified applications for the product and does not waive any code requirement not specified in this document.

Revision Date:

Approval Date: October 21, 2003 By: \_\_\_\_\_

Lee E. Finley, Jr.  
Product & Material Review  
Integrated Services Bureau